REMARKS

In the Office Action dated April 7, 2004, claims 11-16 were rejected under 35 U.S.C. § 102 over U.S. Patent No. 6,011,786 (Dent); claim 24 was rejected under § 102 over U.S. Patent No. 5,093,928 (Kage); and claims 1-10, 17-23, and 25-32 were rejected under § 103 over Dent in view of Kage.

Independent claim 11 was rejected as being anticipated by Dent. Applicant respectfully submits that Dent does not disclose communicating idle periods in time slots allocated as guard periods adjacent the predetermined time slots (for carrying control signaling) of predetermined frames. Dent teaches the use of the same time/frequency window to communicate the same control channel in a second, adjacent cell, if this time/frequency window is not being used to communicate traffic, "e.g., when the time/frequency window is unassigned to a traffic channel or when a traffic channel assigned to the time/frequency window is idle due to discontinuous transmission (DTX)." Dent, 4:6-12. This is illustrated in Figures 8A-8C of Dent. For example, in Figure 8A, time slot t_1 at frequency f_u is used to communicate control channel C_i. In the neighboring cell j, the same time/frequency window (t_1/f_u) is used to carry either traffic or the same control channel C_i (if no traffic is communicated in that window in cell j). Similarly, in cell k, traffic or C_i is communicated in the same window t_1/f_u.

There is no teaching whatsoever in Dent of communicating idle periods in time slots *allocated as guard periods* adjacent the predetermined time slots that carry control signaling. In fact, the opposite is depicted in Figure 8A, in which time slot t_2 at frequency f_u in cell i is used to carry either traffic or control channel C_j. Time slot t_2 is adjacent time slot t_1 (which carries control signaling C_i). Thus, time slot t_2 is *not* a time slot allocated as a guard period, but in fact, is allocated to carry either traffic or control signaling. The same is true of time slots in cell j that are adjacent time slot t_2 at frequency f_u (which carries control signaling C_j), and time slots in cell k that are adjacent time slot t_3 at frequency f_u (which carries control signaling C_k). Figures 8B and 8C illustrate that traffic is communicated in time slots adjacent the time slots carrying control signaling. Therefore, in Dent, there is no communicating of idle periods in time slots

allocated as guard periods adjacent the predetermined time slots carrying control signaling.

Claim 11, and dependent claims 12-16 and 28, are thus allowable over Dent.

Independent claim 24 was rejected as being anticipated by Kage. Applicant respectfully disagrees with this assessment. Kage clearly does not disclose a control unit adapted to receive control signaling carried in *time slots* adjacent idle *time slots* defined as guard periods. Kage describes a channel selection system that "rarely selects a data channel adjoining a control channel since the probability that such a data channel is registered as an idle channel is extremely low." Kage, 3:28-32. The channels referred to by Kage are *frequency* channels. For example, Figure 2 illustrates the determination of whether a data channel f_n adjoins a control channel f_c, where f_n and f_c are frequencies. Clearly, there is no teaching whatsoever by Kage of receiving control signaling carried in *time slots* adjacent idle *time slots* defined as guard periods. Therefore, claim 24 is allowable over Kage.

Claim 1 was rejected as being obvious over the asserted combination of Dent and Kage. To establish a *prima facie* case of obviousness, at least the following two requirements must be met: (1) there must be some motivation or suggestion to combine the reference teachings; and (2) the references when combined must teach or suggest *all* elements of the claim. MPEP § 2143 (8th ed., Rev. 2) at 2100-129.

As discussed above, neither Dent nor Kage describes or suggests transmitting control signaling in time slots adjacent time slots allocated as guard periods. It is clear from Figures 8A-8C of Dent that the technique used by Dent causes either control or traffic channels to be communicated in time slots adjacent another time slot that communicates control signaling. Kage relates to a channel selection system based on *frequency* channels, not *time slots*, as recited by claim 1. Therefore, even if Dent and Kage can be properly combined, the hypothetical combination of Dent and Kage does not teach or suggest *all* elements of claim 1. For at least this reason, a *prima facie* case of obviousness has not been established with respect to claim 1.

Furthermore, there simply is no motivation or suggestion to combine the teachings of Dent and Kage. Dent relates to use of the same time/frequency window to communicate the same control channel in a second adjacent cell when the time/frequency

window is not being used to communicate traffic, as illustrated in Figure 8A-8C. However, Dent teaches that traffic or control channels are communicated in time slots adjacent to time slots that communicate control signaling. Such a teaching is contrary to the subject matter of claim 1 relating to the transmitting of control signaling in time slots adjacent time slots *allocated as guard periods*. This is a clear indication that there is no motivation to combine Dent with Kage to achieve the claimed subject matter.

Moreover, Kage refers to a channel selection system in which the channels selected are *frequency* channels, not *time slots*. In view of the fact that Dent teaches away from the present invention (by teaching that traffic or control signaling is communicated in time slots adjacent other time slots that communicates control signaling), and the fact that Kage is completely unrelated to the claimed subject matter, there is no motivation or suggestion to combine the teachings of Dent and Kage. The point made in the Office Action that "Kage discloses that a control channel (signaling time slot) is arranged next to idle slots (guard slots) to avoid interference with other data channels" in the Office Action (at page 5) is a factual error, since the channels of Kage are *not* time slots, but frequencies. Therefore, a *prima facie* case of obviousness has not been established with respect to claim 1 for at least this additional reason.

With respect to claim 7, the hypothetical combination of Dent and Kage does not teach or suggest providing predetermined time slots as guard periods to reduce likelihood of interference of signaling due to overlap of time slots in the neighboring cell segments. Furthermore, there is no motivation or suggestion to combine Dent and Kage to achieve the subject matter of claim 7. Therefore, a *prima facie* case of obviousness has not been established with respect to claim 7.

The hypothetical combination of Dent and Kage also does not disclose or suggest a controller to define guard periods each including at least one time slot to protect control signaling communicated in a time slot from interference due to overlap of time slots in neighboring cell segments, as recited in independent claim 17. Also, there is no motivation or suggestion to combine Dent and Kage to achieve the subject matter of claim 17. A *prima facie* case of obviousness has thus not been established with respect to claim 17.

Independent claims 21, 22, and 25 are allowable over the asserted combination of Dent and Kage for similar reasons. Claims dependent from independent claims 1, 7, 17, 22, and 25 are allowable for at least the same reasons as corresponding independent claims.

In view of the foregoing, allowance of all claims is respectfully requested. The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 20-1504 (NRT.0004US).

Respectfully submitted,

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